FIG. 1

DATA STRUCTURE OF F-PAD

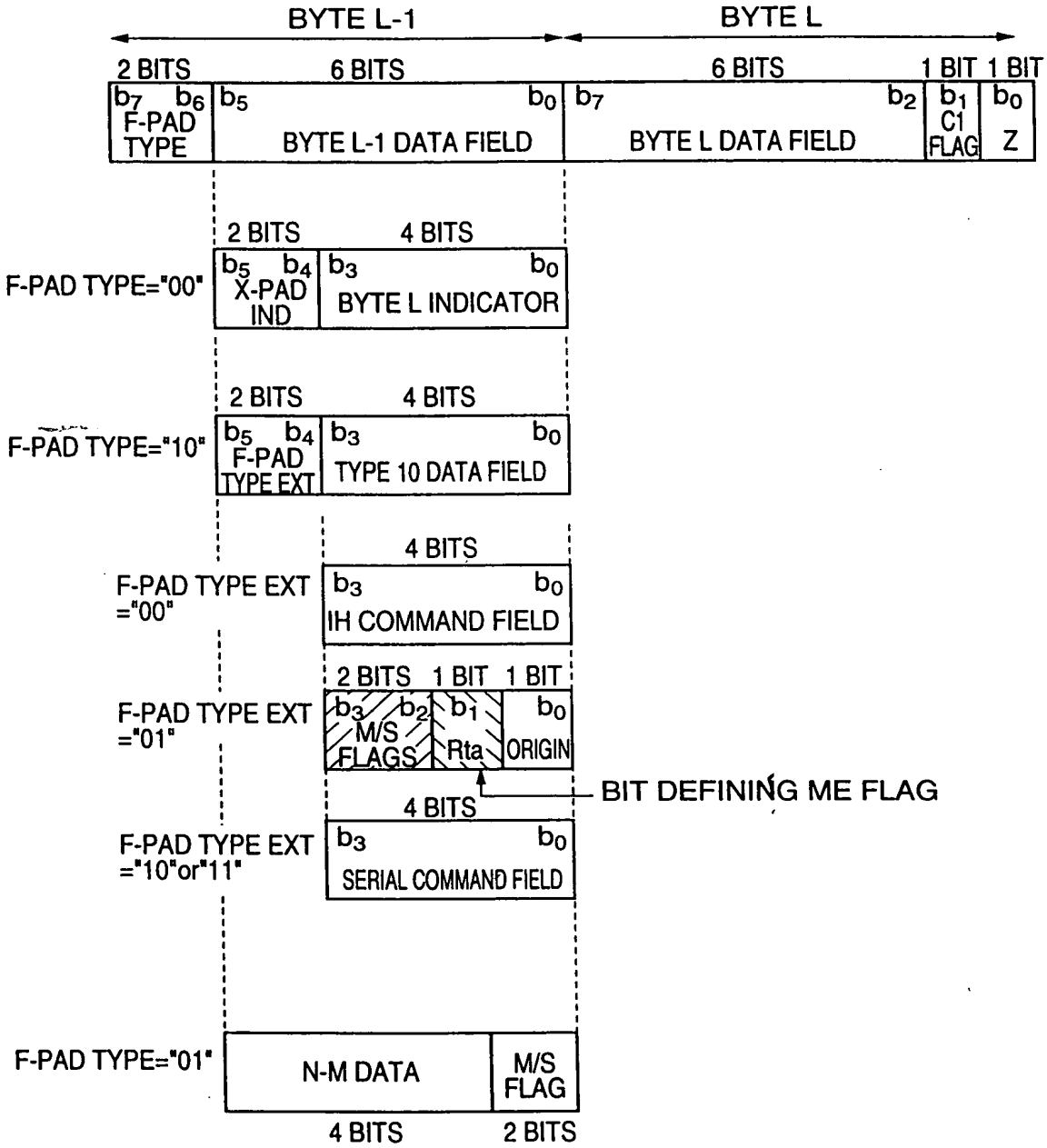

FIG. 2

DATA STRUCTURE OF RDS SIGNAL

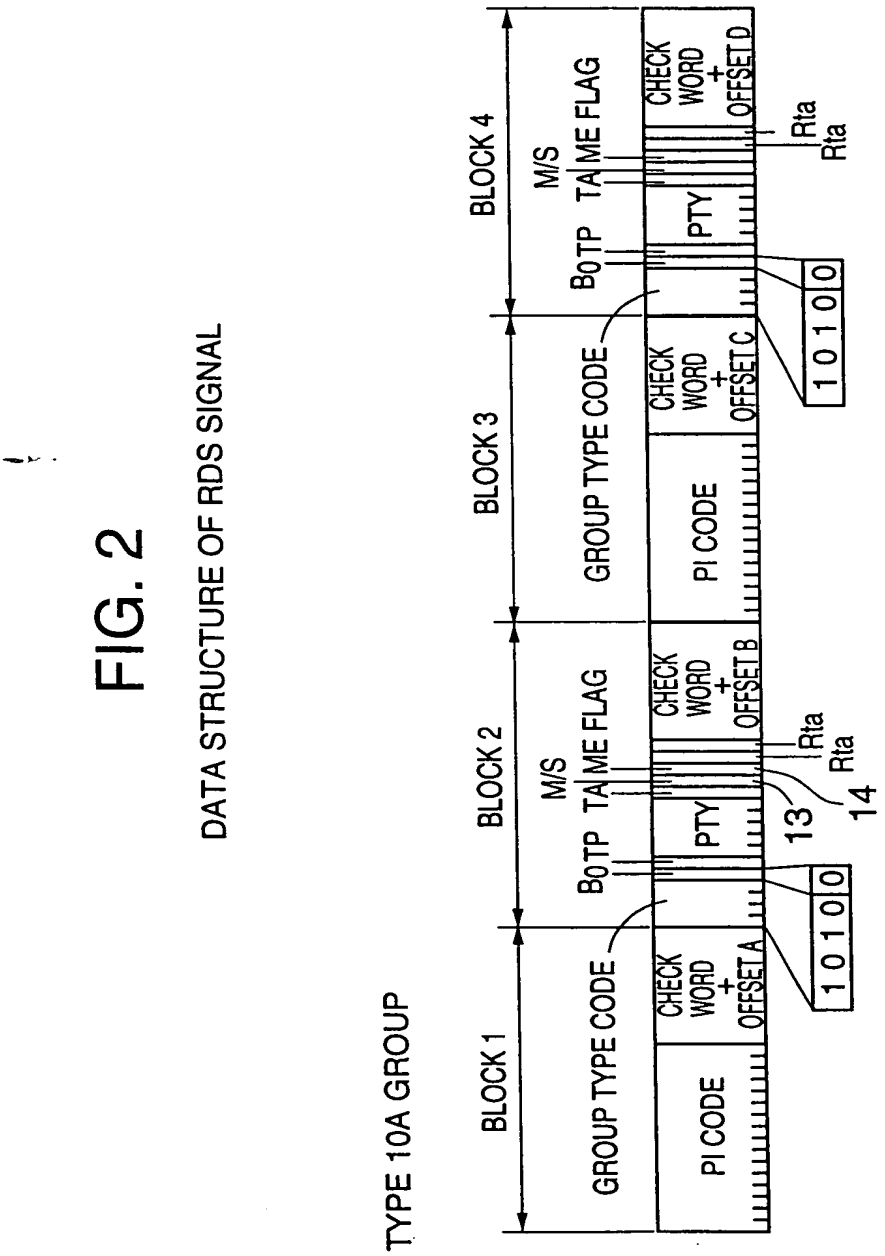

FIG. 3

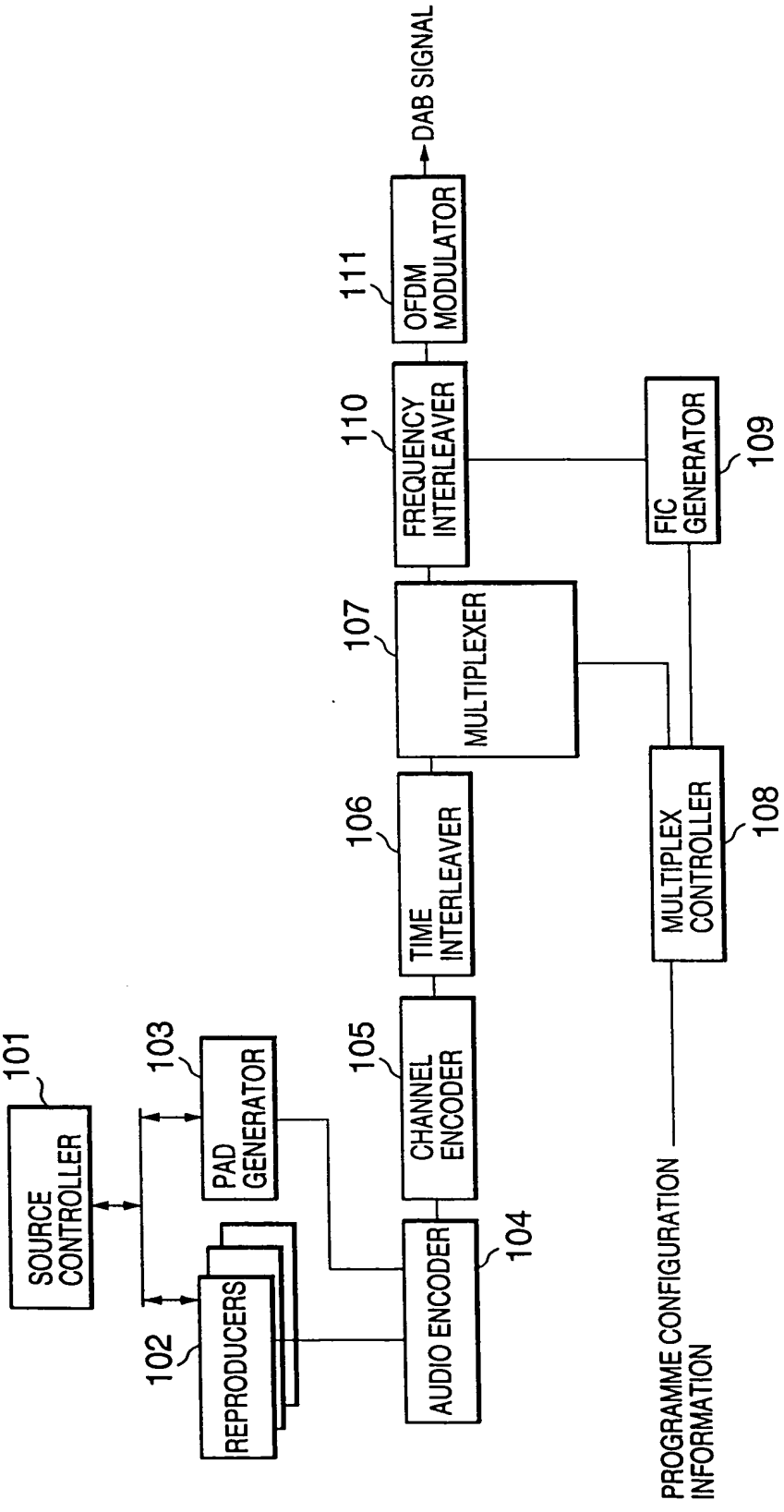
SOURCE CONTROLLER
101
PAD GENERATOR
103
REPRODUCERS
102
AUDIO ENCODER
104
CHANNEL ENCODER
105
TIME INTERLEAVER
106
MULTIPLEXER
107
MULTIPLEX CONTROLLER
108
FIC GENERATOR
109
FREQUENCY INTERLEAVER
110
OFDM MODULATOR
111
DAB SIGNAL
PROGRAMME CONFIGURATION INFORMATION

FIG. 4

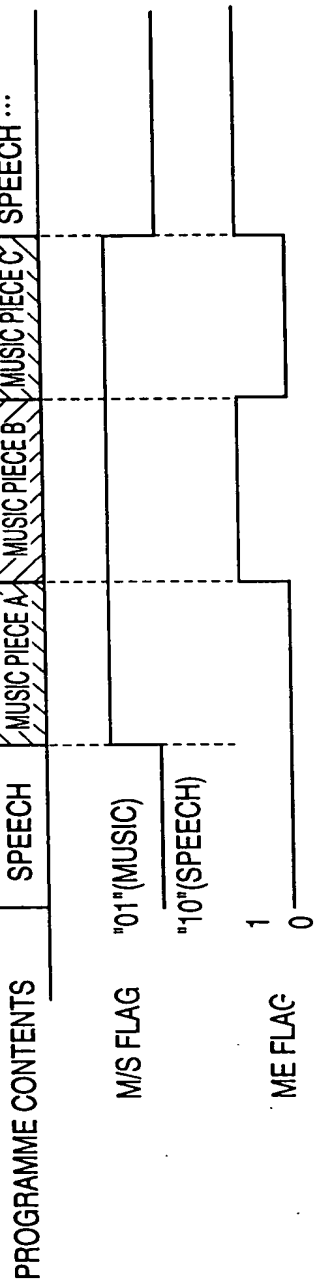
PROGRAMME CONTENTS
SPEECH
MUSIC PIECE A
MUSIC PIECE B
MUSIC PIECE C
SPEECH ···
M/S FLAG
"01"(MUSIC)
"10"(SPEECH)
ME FLAG
1
0

FIG. 5

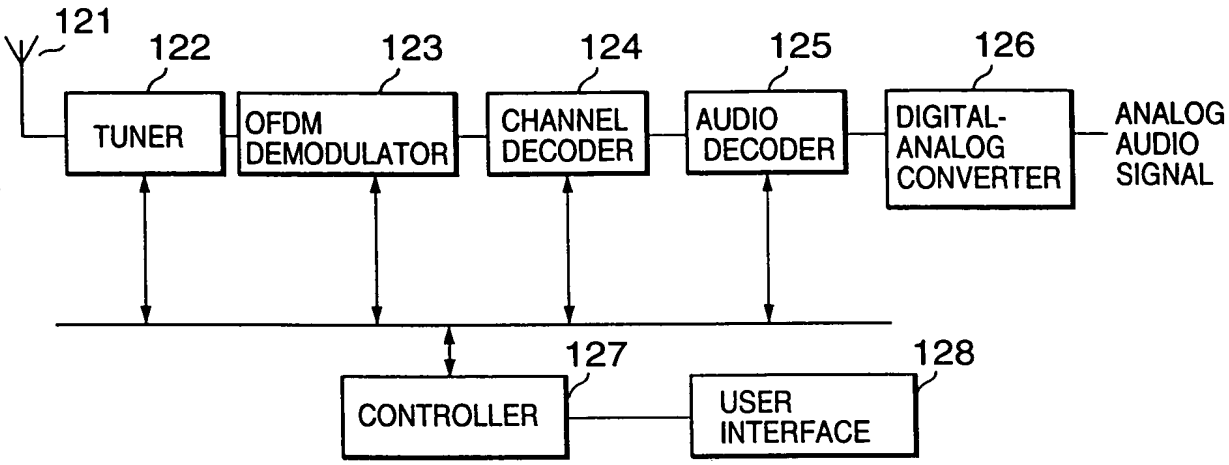
121
122
123
124
125
126
TUNER
OFDM DEMODULATOR
CHANNEL DECODER
AUDIO DECODER
DIGITAL-ANALOG CONVERTER
ANALOG AUDIO SIGNAL
127
128
CONTROLLER
USER INTERFACE

FIG. 6

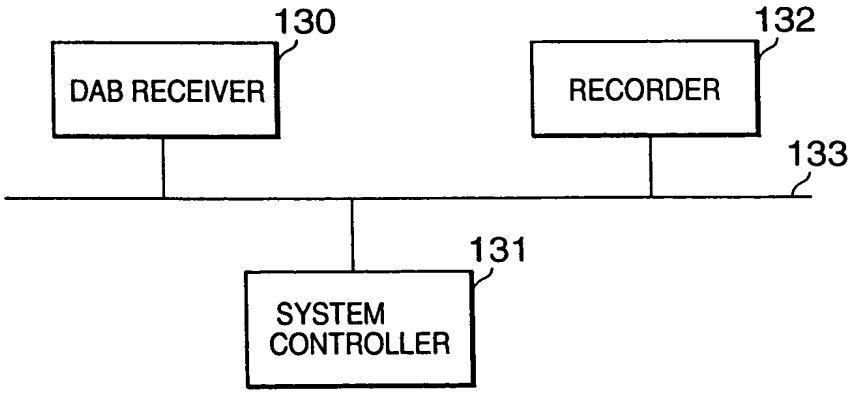
130
132
DAB RECEIVER
RECORDER
133
131
SYSTEM CONTROLLER

FIG. 7

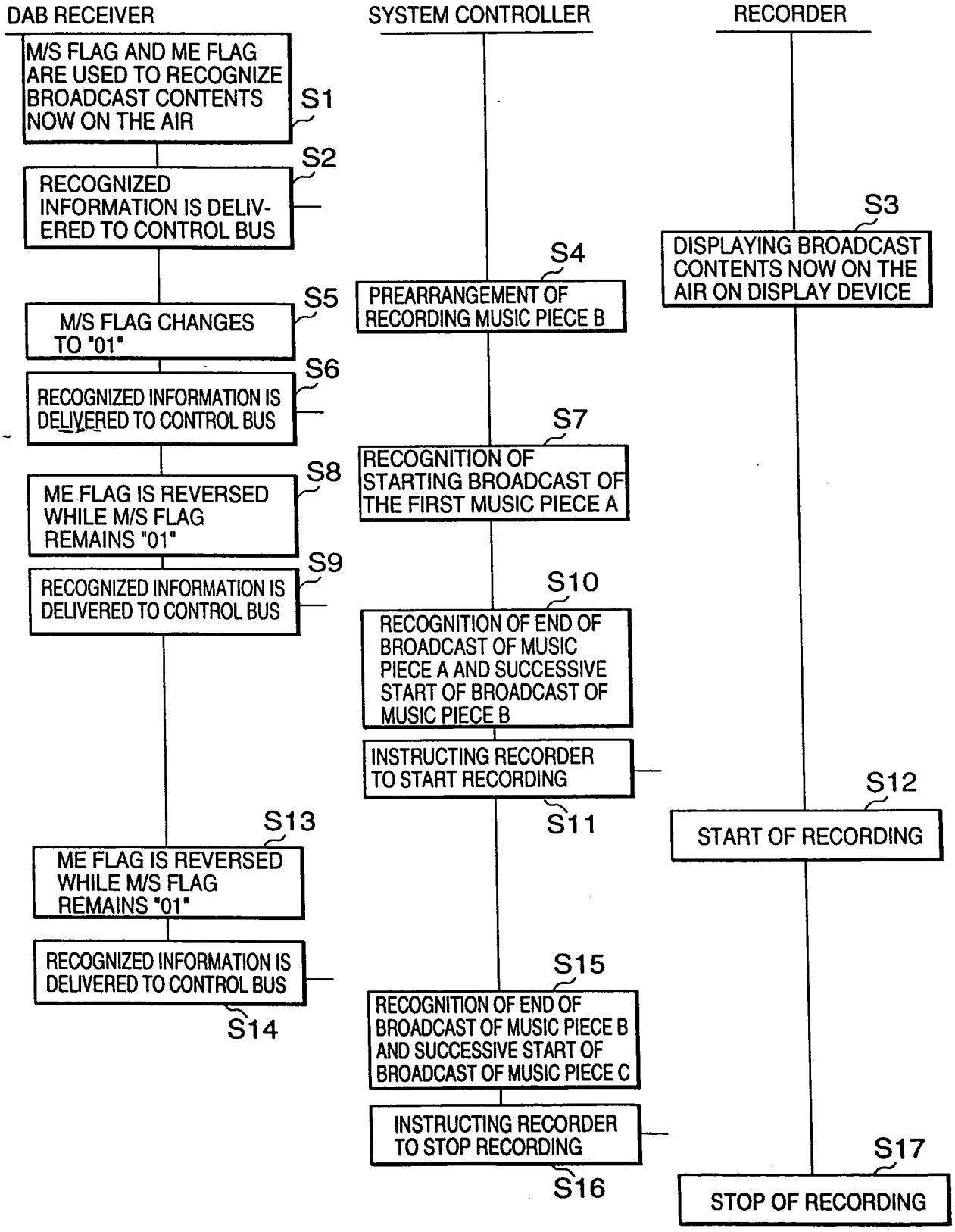
DAB RECEIVER
SYSTEM CONTROLLER
RECORDER
M/S FLAG AND ME FLAG ARE USED TO RECOGNIZE BROADCAST CONTENTS NOW ON THE AIR
S1
RECOGNIZED INFORMATION IS DELIV-ERED TO CONTROL BUS
S2
DISPLAYING BROADCAST CONTENTS NOW ON THE AIR ON DISPLAY DEVICE
S3
PREARRANGEMENT OF RECORDING MUSIC PIECE B
S4
M/S FLAG CHANGES TO "01"
S5
RECOGNIZED INFORMATION IS DELIVERED TO CONTROL BUS
S6
RECOGNITION OF STARTING BROADCAST OF THE FIRST MUSIC PIECE A
S7
ME FLAG IS REVERSED WHILE M/S FLAG REMAINS "01"
S8
RECOGNIZED INFORMATION IS DELIVERED TO CONTROL BUS
S9
RECOGNITION OF END OF BROADCAST OF MUSIC PIECE A AND SUCCESSIVE START OF BROADCAST OF MUSIC PIECE B
S10
INSTRUCTING RECORDER TO START RECORDING
S11
START OF RECORDING
S12
ME FLAG IS REVERSED WHILE M/S FLAG REMAINS "01"
S13
RECOGNIZED INFORMATION IS DELIVERED TO CONTROL BUS
S14
RECOGNITION OF END OF BROADCAST OF MUSIC PIECE B AND SUCCESSIVE START OF BROADCAST OF MUSIC PIECE C
S15
INSTRUCTING RECORDER TO STOP RECORDING
S16
STOP OF RECORDING
S17

FIG. 8

DATA STRUCTURE OF RDS SIGNAL

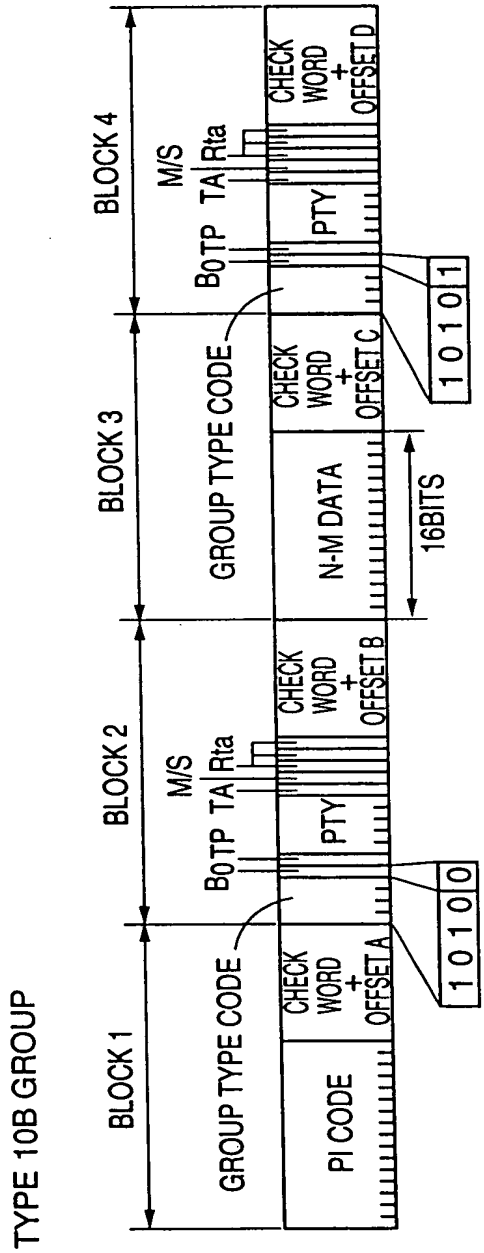

FIG. 9

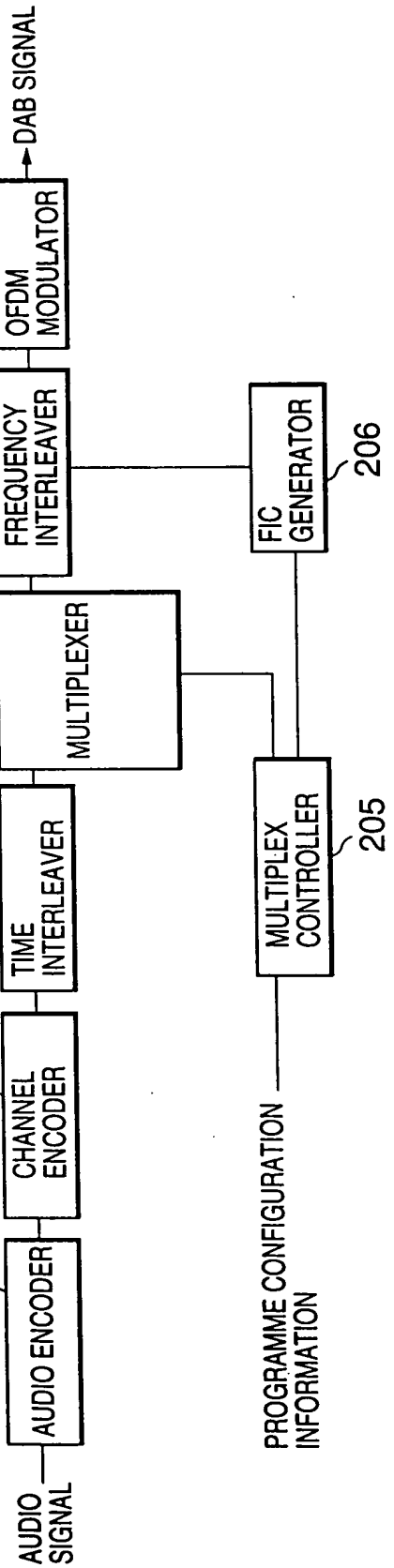
AUDIO SIGNAL
201
AUDIO ENCODER
202
CHANNEL ENCODER
203
TIME INTERLEAVER
204
MULTIPLEXER
207
FREQUENCY INTERLEAVER
208
OFDM MODULATOR
DAB SIGNAL
PROGRAMME CONFIGURATION INFORMATION
205
MULTIPLEX CONTROLLER
206
FIC GENERATOR

FIG. 10

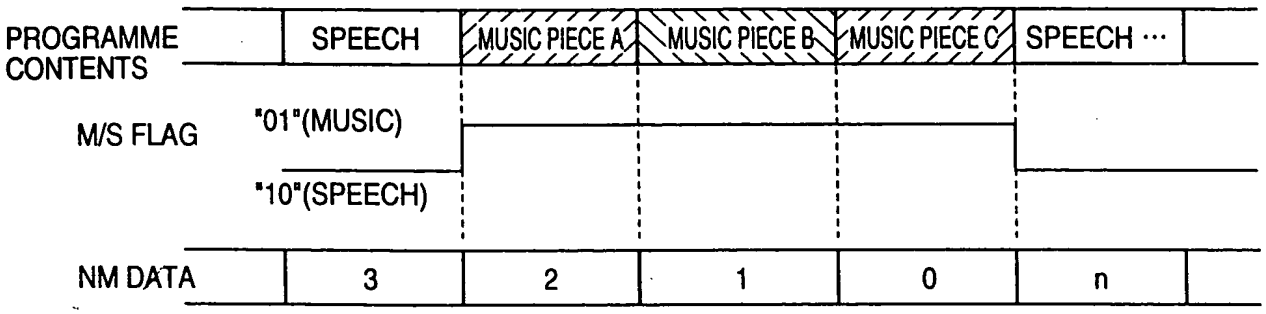
PROGRAMME CONTENTS
SPEECH
MUSIC PIECE A
MUSIC PIECE B
MUSIC PIECE C
SPEECH ···
M/S FLAG
"01"(MUSIC)
"10"(SPEECH)
NM DATA
3
2
1
0
n

FIG. 11

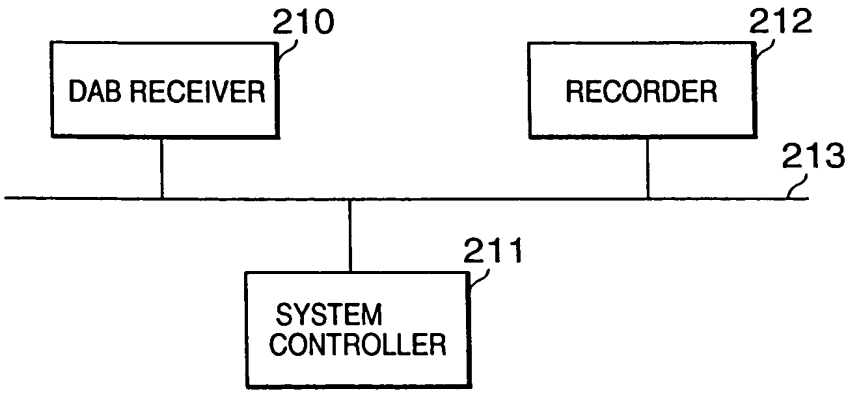
210
DAB RECEIVER
212
RECORDER
213
211
SYSTEM CONTROLLER

FIG. 12

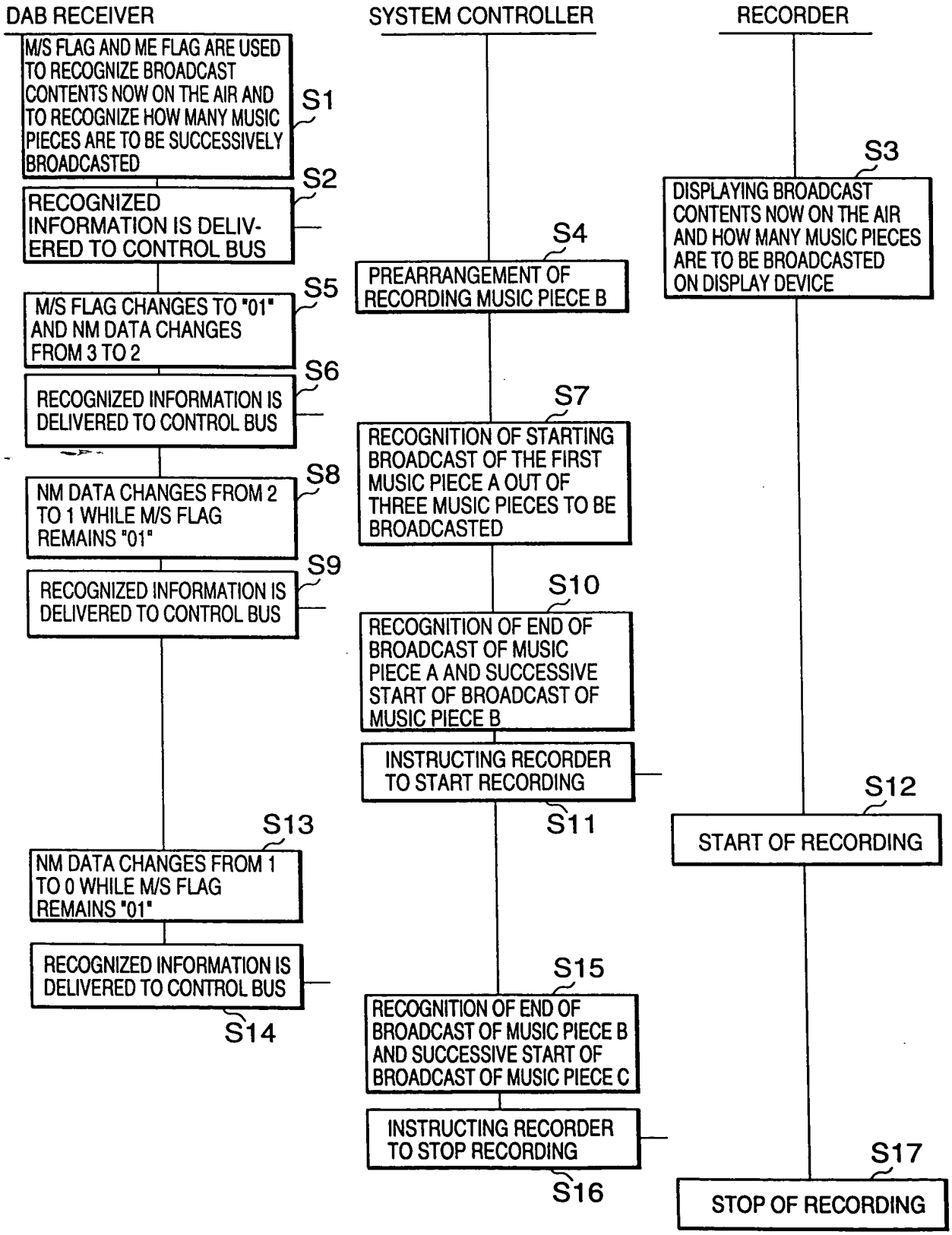
DAB RECEIVER
SYSTEM CONTROLLER
RECORDER
M/S FLAG AND ME FLAG ARE USED TO RECOGNIZE BROADCAST CONTENTS NOW ON THE AIR AND TO RECOGNIZE HOW MANY MUSIC PIECES ARE TO BE SUCCESSIVELY BROADCASTED
S1
RECOGNIZED INFORMATION IS DELIVERED TO CONTROL BUS
S2
M/S FLAG CHANGES TO "01" AND NM DATA CHANGES FROM 3 TO 2
S5
RECOGNIZED INFORMATION IS DELIVERED TO CONTROL BUS
S6
NM DATA CHANGES FROM 2 TO 1 WHILE M/S FLAG REMAINS "01"
S8
RECOGNIZED INFORMATION IS DELIVERED TO CONTROL BUS
S9
NM DATA CHANGES FROM 1 TO 0 WHILE M/S FLAG REMAINS "01"
S13
RECOGNIZED INFORMATION IS DELIVERED TO CONTROL BUS
S14
PREARRANGEMENT OF RECORDING MUSIC PIECE B
S4
RECOGNITION OF STARTING BROADCAST OF THE FIRST MUSIC PIECE A OUT OF THREE MUSIC PIECES TO BE BROADCASTED
S7
RECOGNITION OF END OF BROADCAST OF MUSIC PIECE A AND SUCCESSIVE START OF BROADCAST OF MUSIC PIECE B
S10
INSTRUCTING RECORDER TO START RECORDING
S11
RECOGNITION OF END OF BROADCAST OF MUSIC PIECE B AND SUCCESSIVE START OF BROADCAST OF MUSIC PIECE C
S15
INSTRUCTING RECORDER TO STOP RECORDING
S16
DISPLAYING BROADCAST CONTENTS NOW ON THE AIR AND HOW MANY MUSIC PIECES ARE TO BE BROADCASTED ON DISPLAY DEVICE
S3
START OF RECORDING
S12
STOP OF RECORDING
S17

FIG. 13

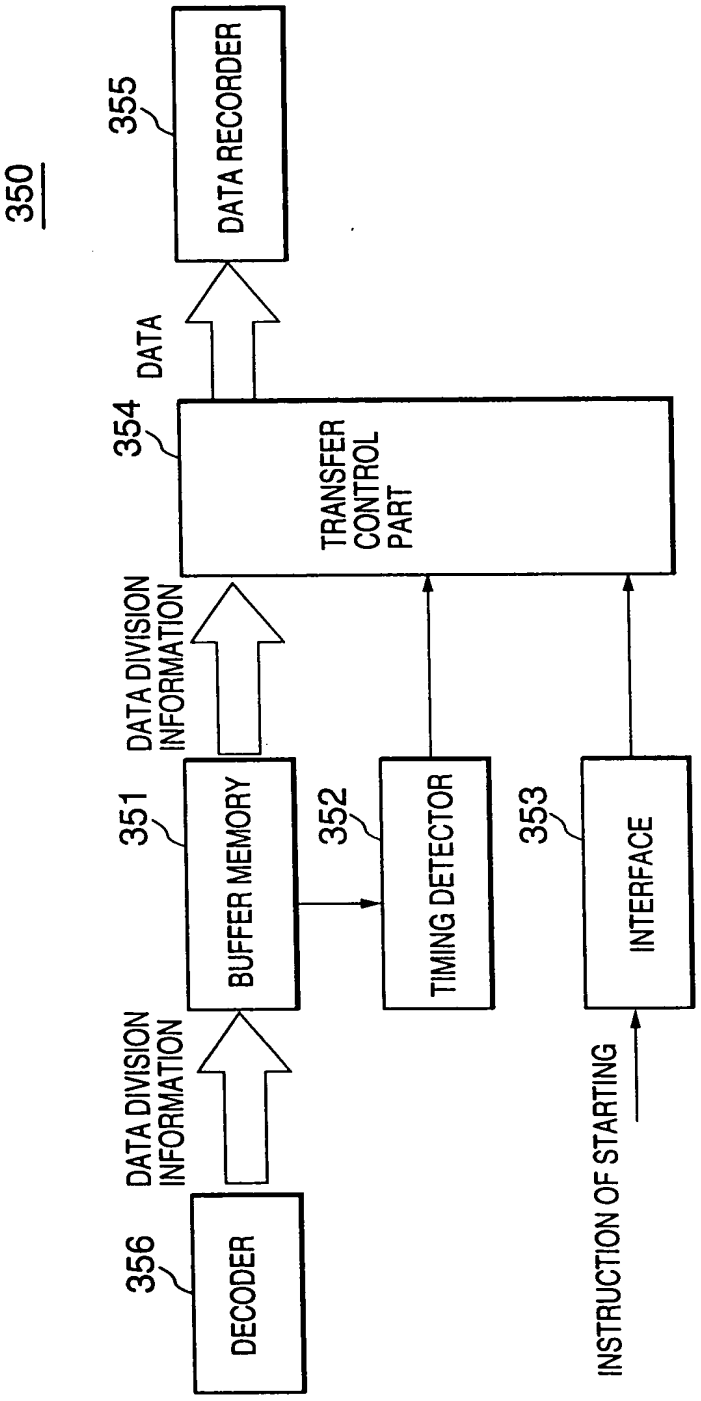
350
355
DATA RECORDER
DATA
354
TRANSFER CONTROL PART
DATA DIVISION INFORMATION
351
BUFFER MEMORY
352
TIMING DETECTOR
353
INTERFACE
DATA DIVISION INFORMATION
356
DECODER
INSTRUCTION OF STARTING

FIG. 14

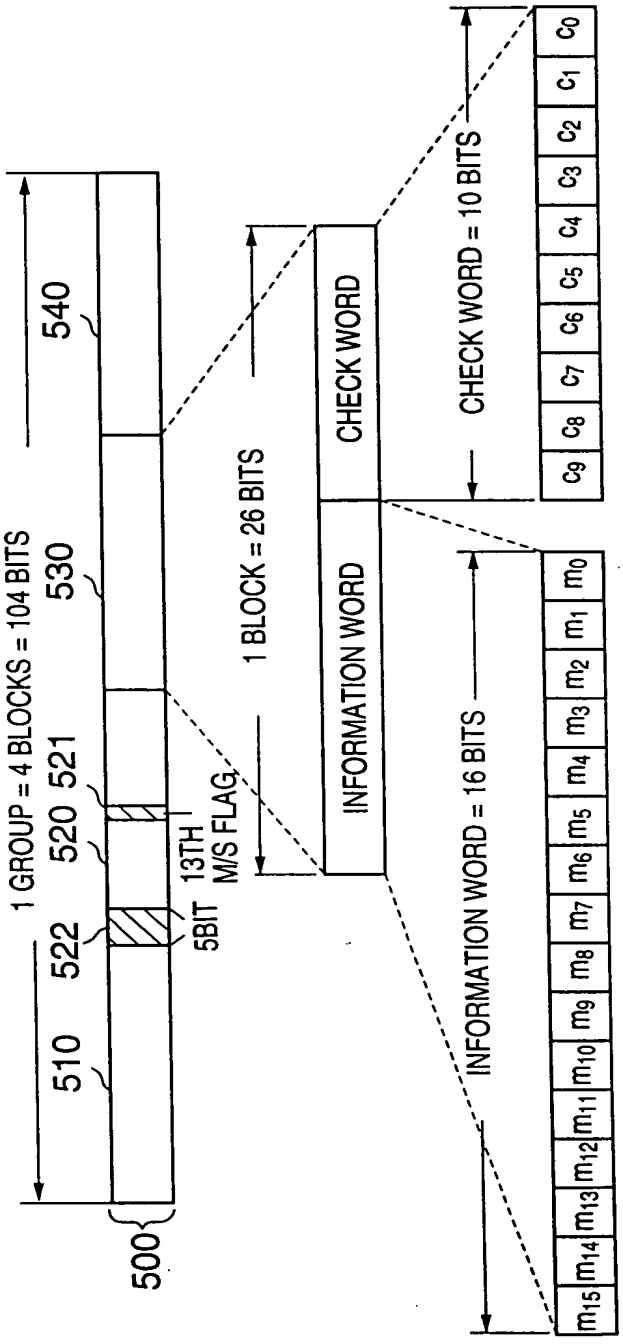
1 GROUP = 4 BLOCKS = 104 BITS
540
530
521
520
522
510
500
13TH M/S FLAG
5BIT
1 BLOCK = 26 BITS
INFORMATION WORD
CHECK WORD
INFORMATION WORD = 16 BITS
CHECK WORD = 10 BITS
m15 m14 m13 m12 m11 m10 m9 m8 m7 m6 m5 m4 m3 m2 m1 m0
c9 c8 c7 c6 c5 c4 c3 c2 c1 c0

FIG. 15(a)

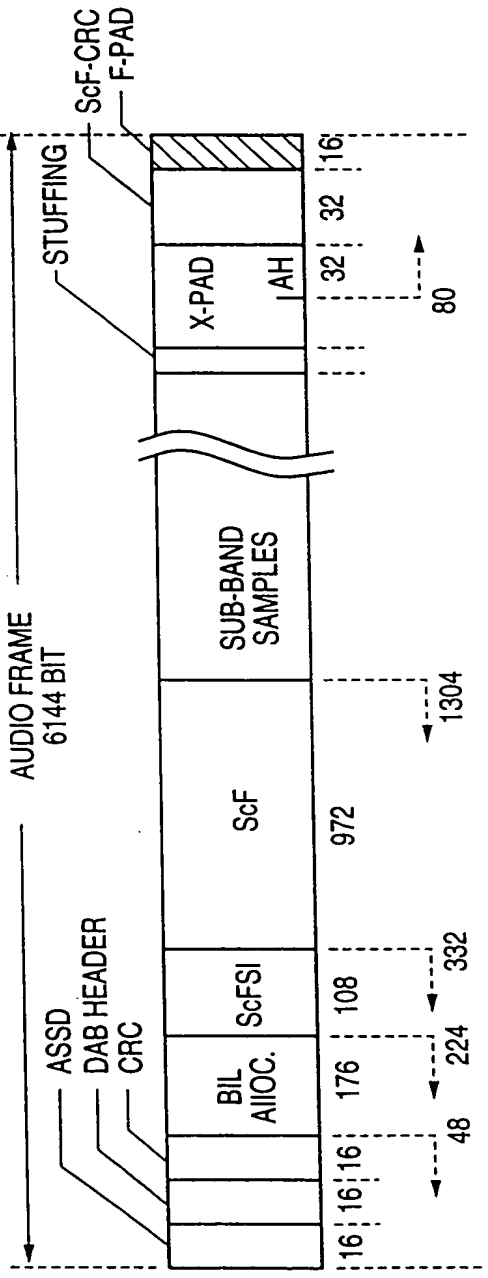

FIG. 15(b)

HEADER	ASSD:AUDIO SERVICE SYNCHRONIZATION DATA DAB header:DABHEADER CRC :DAB header,Bit Allocation,CRC FOR ScFSI
SIDE INFORMATION	Bit Alloc:BIT ALLOCATION INFORMATION ScFSI:SCALE FACTOR SELECT INFORMATION ScFSI:SCALE FACTOR
MAIN AUDIO DATA	Sub-band sample:SUB-BAND SIGNAL
PROGRAMME ASSOCIATED INFORMATION	stuffing:STUFFING ScF-CRC:CRC FOR SCALE FACTOR-CRC X-PAD:EXTENDED PROGRAMME ASSOCIATED DATA F-PAD:FIXED PROGRAM ASSOCIATED DATA